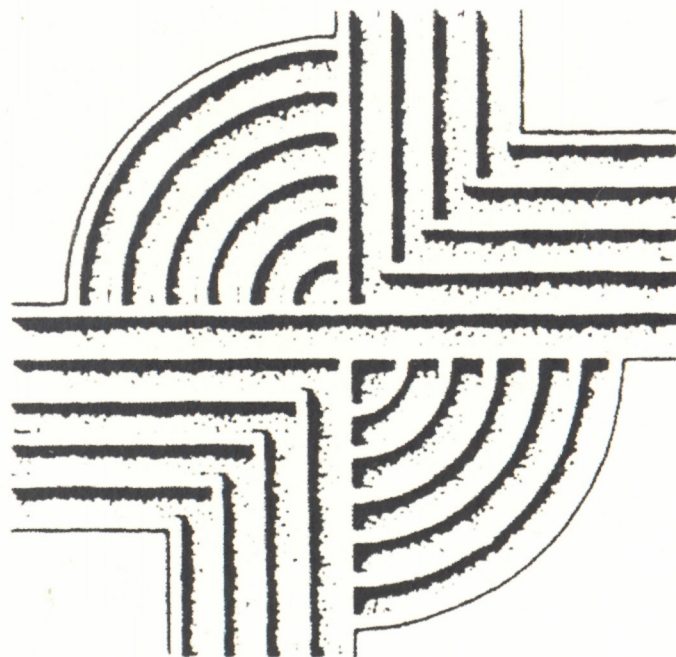


**CULTURAL RESOURCES SURVEY OF
THE HENRY RIVER BASIN SEWER PROJECT,
CATAWBA COUNTY, NORTH CAROLINA**



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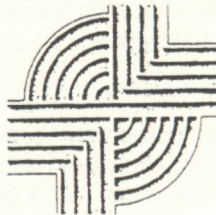
CHICORA RESEARCH CONTRIBUTION 349

**CULTURAL RESOURCES SURVEY OF
THE HENRY RIVER BASIN SEWER PROJECT,
CATAWBA COUNTY, NORTH CAROLINA**

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ABSTRACT

This report provides the results of a cultural resources investigation of approximately 10.97 miles of sewer lines located in the town of Hickory in Catawba County, North Carolina. The study was conducted by Dr. Michael Trinkley of Chicora Foundation for Mr. Dan McPherson of Hayes, Seay, Mattern & Mattern, Inc. and is intended to assist this company comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800.

The project consists of 3.23 miles of force main (River Road and Valleyview Drive), 7.74 miles of gravity sewer (Henry Fork River, Muddy Creek, Clark Creek, Mull Creek, and Muddy Creek Tributary), and two pump stations (Clark Creek and Sandy Ford). Much of the route follows existing roads and river edges, while the rest of the project route traverses heavily wooded and yarded areas. The soils tended to be in low, poorly drained areas.

Background investigations performed at the North Carolina Architectural Branch resulted in several historical buildings in the area, but only one National Register of Historical Places district – Yoder's Mill. This district, potentially impacted by the River Road Force Main, was recorded on the National Register of Historic Places in 1980. Unfortunately, the mill site was destroyed in a 1916 flood, but some existing outbuildings include a grist mill, molasses evaporator, and hydroelectric plant.

The North Carolina Archaeological Branch revealed no sites on the project route, but two sites, 31CT137 and 31CT150, were found within view of the proposed sewer system. 31CT137 consists of a small prehistoric site located on a ridge top overlooking Mull Creek. Only one biface fragment and a couple of flakes were found, so the site was found not eligible for inclusion on the National Register of Historic Places. 31CT150

contained both prehistoric and historic components. This site, also located on a ridge top, consisted of various lithic debitage, flakes, and cobbles and ceramic dating to the Woodland period. The historic materials included fragments of earthenware and stoneware which may date to the mid nineteenth century. This site was also found not eligible for inclusion on the National Register of Historic Places.

The archaeological survey of the project area consisted of a pedestrian survey along the existing roads and shovel testing in all other areas, with the majority along river edges. The initial interval of 100-feet was altered to testing at every 200-feet, given the nature of the soils. All shovel test fill was screened through ¼-inch mesh and the shovel tests were backfilled at the completion of the study. A total of 259 shovel tests were excavated along the center line of the proposed route.

No archaeological sites were identified during this investigation, nor were any additional architectural sites noted that possessed the integrity to be considered for eligibility on the National Register of Historic Places.

It is possible that archaeological remains may be encountered in the project area during construction. Construction crews should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who should in turn report the material to the State Historic Preservation Office or to Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No construction should take place in the vicinity of these late discoveries until they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

ABSTRACT

This paper presents the results of a study of the effects of a 12-week intervention program on the health and well-being of 100 elderly people living in a retirement home. The study was conducted by a team of researchers from the University of California, San Diego. The results of the study are presented in this paper.

The study was conducted in a retirement home in San Diego, California. The study was designed to evaluate the effects of a 12-week intervention program on the health and well-being of elderly people. The program consisted of a series of exercises and activities designed to improve physical and mental health.

The results of the study showed that the intervention program had a significant positive effect on the health and well-being of the elderly people. The program was found to be effective in improving physical and mental health, and in reducing the risk of falls and other health problems.

The study also found that the intervention program was well-received by the elderly people. The program was found to be enjoyable and beneficial, and the elderly people were motivated to participate in the program.

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INTRODUCTION

This investigation was conducted by Dr. Michael Trinkley of Chicora Foundation, Inc. for Mr. Dan McPherson of Hayes, Seay, Mattern & Mattern, Inc. of Spartanburg, SC. The work was conducted to assist Hayes, Seay, Mattern & Mattern comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800.

The project site consists of seven sets of corridors measuring 50 feet wide and totaling about 10.97 miles. The proposed route, located in central Catawba County, North Carolina (Figure 1), consists of approximately 3.23 miles of force main, 7.74 miles of gravity sewers, and two pumping stations. This area of North Carolina in the town of Hickory is at the foot hills of the Appalachian Mountains, so topography is generally rolling and, in some areas, steeply sloping. The proposed route, however, remains in the low areas, mainly following rivers and creeks, but also paralleling many roads in the area.

Seven separate sewer lines make up the project area (Figure 2). The Mull Creek Interceptor follows Mull Creek approximately parallel with U.S. Highway 321, the River Road Force Main follows River Road, ending at the Henry Fork Waste Treatment Plant, the Henry River Basin Interceptor follows Muddy Creek, the Muddy Creek Tributary Interceptor follows a tributary of Muddy Creek, ending at an existing pump station, the Valleyview Drive Main Force follows that road and a portion of Startown Road, the Clark Creek Interceptor runs along Clark Creek, and the Fairgrove Business Park Interceptor runs from U.S. Highway 70 to an existing sewer line where the Clark Creek Pump Station is proposed to be located. The Clark Creek Interceptor is also proposed to connect with this pump station. Both the River Road Force Main and the Henry River Basin Interceptor are proposed to connect to the Sandy ford Pump Station.

As previously mentioned, the corridor will include both force main sewer systems and gravity sewers. Two pumping stations will also be included in the project. Some landscape alteration, such as clearing and grubbing of vegetation, along with excavation, will occur. We expect that this work will have the potential to cause considerable damage to the ground surface and any archaeological remains which may be present.

Chicora submitted a budgetary proposal for the project on October 31, 2001, with a revised budged sent on January 11, 2002. The proposal was accepted shortly thereafter.

The statewide archaeological site files held at the office in Raleigh were examined for information pertinent to the project area. No sites were located on the proposed tract, but three archaeological sites (31CT123, 31CT137, and 31CT150) were identified near the route. 31CT137 consists of a small collection of prehistoric lithics while 31CT150 contains some Woodland period pottery, prehistoric lithic debitage, and some nineteenth century earthenware and stoneware fragments. 31CT123, also recorded at the architectural branch in Raleigh is the Yoder's Mill National Register of Historic Places district. Yoder's Mill, recorded on the National Register of Historic Places in 1980, was mostly destroyed in a 1916 flood, but some buildings such as a grist mill, molasses evaporator, and hydroelectric plant, still remain within the district.

Besides Yoder's Mill, the architectural branch failed to produce any other National Register of Historic Places sites. A comprehensive survey has been recorded for Catawba County, but this survey predates the recordation of Yoder's Mill, so may not produce a current accurate assessment of the county (Western Piedmont Council of Governments 1975).

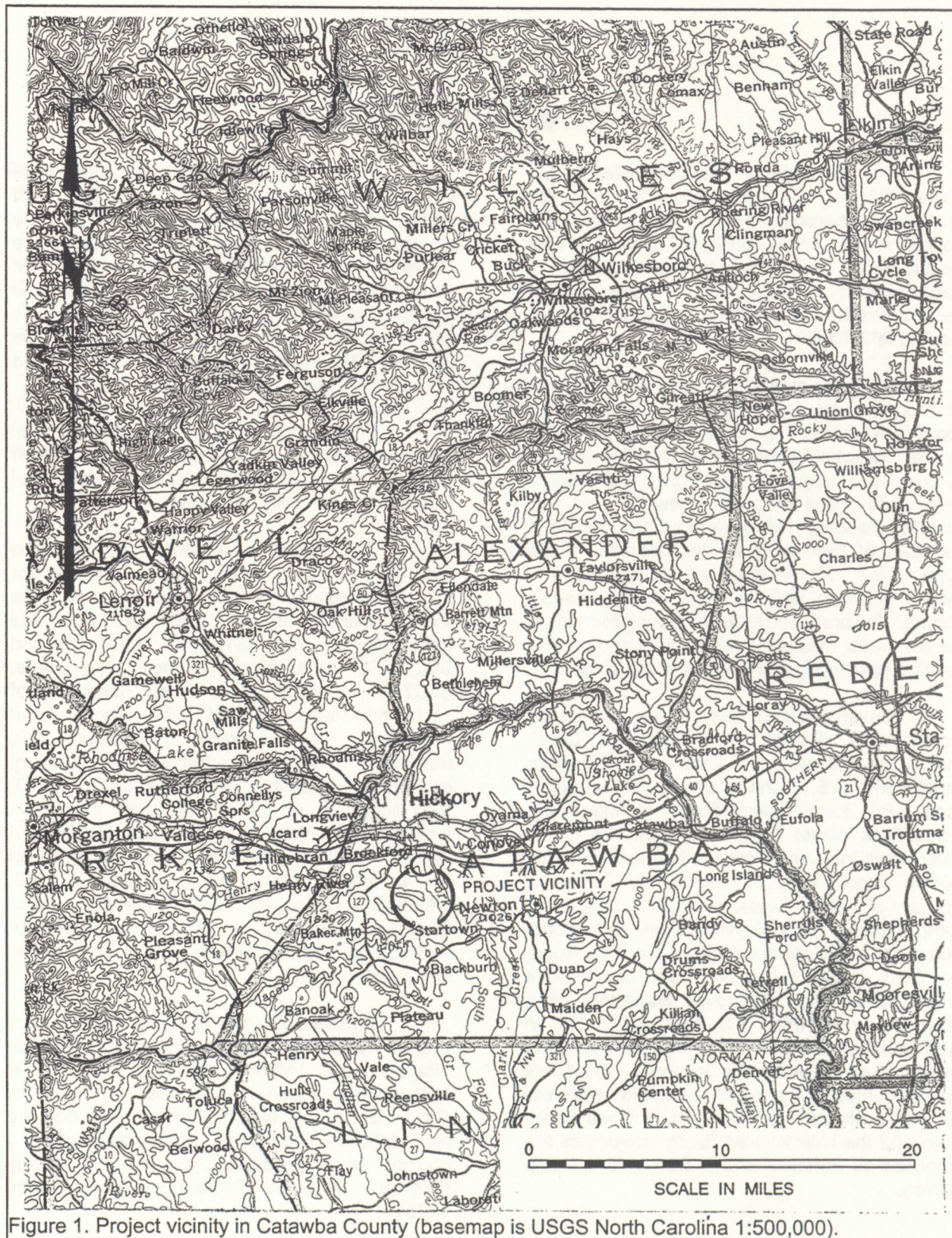


Figure 1. Project vicinity in Catawba County (basemap is USGS North Carolina 1:500,000).

INTRODUCTION

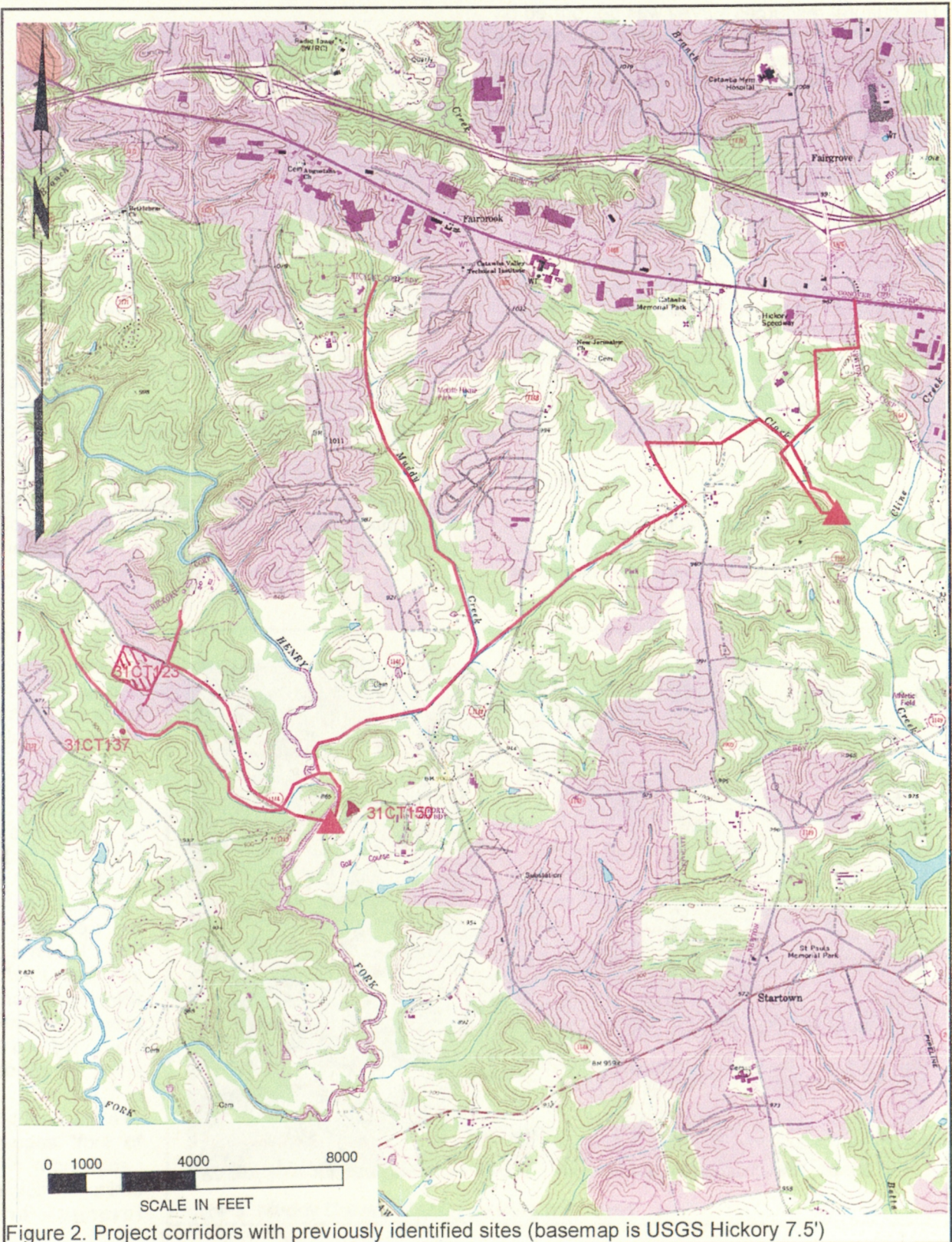


Figure 2. Project corridors with previously identified sites (basemap is USGS Hickory 7.5')

The cultural resources survey was performed on February 11 and 12, 2002. As no archaeological sites were recorded, no laboratory processing was required. Report production was conducted at Chicora's laboratories in Columbia, South Carolina on February 18, 2002.

This report details the investigation of the project area undertaken by Chicora Foundation and the results of that investigation.

NATURAL ENVIRONMENT

Physiography

The 10.97 miles of sewer lines are situated in Catawba County, in the southern portion of the city of Hickory. The corridors, located south of I-40, run adjacent to rivers (e.g. Muddy Creek, Muddy Creek Tributary, Clark Creek, and Mull Creek) and roads (e.g. River Road, Valleyview Drive, Startown Road, and Fairgrove Church Road). The surrounding area consists of mixed rural and residential areas with commercial development along the main roads.

Catawba County is situated within the piedmont. It is bordered to the north by Alexander County, to the northwest by Caldwell County, to the west by Burke County, to the south by Lincoln County and to the east by Redell County.

The piedmont, located between the mountain and coastal plain regions, is an area of dendritic drainage and red clay. Robertson (1960:61) identifies the area as a peneplain, dissected by moderately swift streams flowing south or southwest. The name "piedmont" means "foot of the mountains," which describes the general

topography: a rolling eroded plateau with rounded hills and low ridges (Gade et al. 1986:146). Catawba County is gently sloping to rolling and, in many areas, has fairly broad ridges. In fact, the areas surrounding parts of the corridors were steeply sloping with a small portion of the corridor traversing the side of a slope. Elevations in Catawba County range from about 760 feet AMSL in the southeastern portion of the county to about 1,800 feet AMSL in the western portion at Baker Mountain. Elevations for the project area range from 800 to 975 feet AMSL.

Climate

Elevation and geography both affect the climate of the study area. The Appalachian Mountains to the west of the county block cold air



Figure 3. Muddy Creek Tributary looking northwest.



Figure 4. Hardwoods located along Muddy Creek.

5.6 inches of rain (Brewer 1975).

Geology and Soils

As previously mentioned, the piedmont's landscape has a rolling surface of gentle to steep slopes. Each peneplain is cut or bounded by valleys of even steeper slopes which often have a depth of several hundred feet. This landscape is most noticeable in the interior, away from the Fall Line edge, where the effects of increased erosion are clearer. As you move toward the mountainous Blue Ridge peneplain

masses from the northwest, and elevations in the piedmont area help maintain relatively mild temperatures, with mild, short winters and warm summers. Moving to the coastal plain the winters still tend to be mild, but the summers are typically hot and humid because of moist maritime air.

In the piedmont, in the vicinity of Hickory, in Catawba County, summer temperatures average about 85°F and rarely exceed 100°F. The average yearly temperature is 59°F. The growing season lasts from April through early November with the wettest month, August, producing an average of



Figure 5. Fallow field looking north.

development becomes more incomplete and monadnocks more abundant.

Perhaps the most significant feature of the piedmont's geology is its effect on prehistoric lithic technology. Quartz is the most abundant material, being found in the Kings Mountain formation and also readily available as veins in the crystalline gneisses and schists which underlie (and yield through decomposition) the red clays of the piedmont uplands. The quartz, however, is harder than the associated

rocks and decomposes more slowly than the surrounding matrix. As a result, vein quartz often appears on the surface or very near to the surface. The metavolcanic, such as argillite and rhyolite, are widely available from localized outcroppings of the Carolina Slate Belt.

The majority of the project area, located mostly along the low areas next to rivers and creeks, consist of Chewacla loams and Congaree silt loams. Chewacla soils consist of an A horizon of dark brown (10YR4/3) loam to a depth of 0.8 foot over a brown (10YR5/3) sandy loam which occurs to a depth of 2.3 feet. Congaree soils have an Ap horizon of dark brown (10YR4/3) silt loam to a depth of 0.8 foot over a brown (7.5YR4/3) silt loam to a depth of 1.8 feet.

Also found on the corridors are Hiwassee loams, Pacolet sandy loams, and Cecil sandy loams. Hiwassee soils have a dusky red (2.5YR3/2) Ap horizon of sandy loam to a depth of 0.3 foot over a dark red (10R3/6) clay loam to a depth of 0.6 foot. The Pacolet series have an Ap horizon of reddish brown (5YR4/4) sandy loam to a depth of 0.3 foot over a red (2.5YR4/6) clay loam to a depth of almost 1.2 feet. The Cecil soil



Figure 6. Red clay and planted pines on the Fairgrove Road corridor.

series have an Ap horizon of yellowish red (5YR4/6) fine sandy loam to a depth of 0.5 foot over a red (2.5YR4/8) clay to a depth of 2.5 feet.

Catawba County is part of what Trimble (1974) calls the Cotton-General Farming Area. He observes that the area generally had a relatively low erosive land use in the mid-nineteenth century with a significant increase (43%) in the early twentieth century. He projects that soil loss was anywhere from 0.4 foot to 0.6 foot.

By the time of the Great Depression, the Soil Conservation Service characterized much of Catawba County, including the survey area, as exhibiting "moderate sheet erosion" (Lee 1934).

This suggests that the archaeological potential of the corridors, most especially in those areas of steeper slopes, may be affected by previous erosional damage. This situation is consistent with the findings of the shovel tests. Many tests lacked a distinct A horizon.

Floristics

The piedmont is characterized by the dominance of a pine forest cover, due primarily to three centuries of human land use in the region (Gade et al. 1986:8). Oaks, hickories, and dogwoods also characterize the forests of the piedmont (State Board of Agriculture 1896:37).

Oak-pine forests account for most of the forest acreage in the area, although the vegetation has been dramatically altered from the original or natural potential vegetation prior to the intervention of European settlers. Today, loblolly-shortleaf pine forests are abundant and include red oak, white oak, gum, hickory and yellow-poplar trees.

The majority of the survey area is located in the bottomland areas next to rivers and creeks. These forests mostly consist of river birch, black willow, cottonwood, sycamore, and sweet gum (Braun 1950).

PREHISTORIC AND HISTORIC SYNOPSIS

Previous Research

There are several previous cultural resource management reports for the Catawba County area. For surveys in Hickory see Hargrove (1991). Catawba County has also see several sewer line surveys including Ayers (1980) and Idol and Webb (1999).

Prehistoric Overview

Overviews for North Carolina's prehistory, while of differing lengths and complexity, are available in virtually every compliance report prepared. There are, in addition, some "classic" sources well worth attention, such as Joffre Coe's *Formative Cultures* (Coe 1964), as well as some new general overviews (perhaps the best is that provided by Ward and Davis 1999). These can be supplemented with a broad range of theses and dissertations produced by students of North Carolina's colleges and universities. Also extremely helpful, perhaps even essential, are a handful of recent local synthetic statements, such as that offered by Sassaman and Anderson (1994) for the Middle and Late Archaic. Only a few of the many sources are included in this study, but they should be adequate to give the reader a "feel" for the area and help establish a context for the various sites identified in the study area. Figure 7 offers a generalized view of North Carolina's cultural periods.

In the Carolina Piedmont, lithic scatters are the most common type of prehistoric site encountered. Goodyear et al. (1979:131-145) found that sites containing lithic scatters located in the inter-riverine Piedmont were geographically extensive and exhibited little artifact diversity. These sites have been interpreted as

limited or specialized activity sites which represent resource exploitation or other distinct functions. Nearly all investigators

working in the Piedmont have related these sites to activities involving hunting, nut gathering, and procuring of lithic raw materials (Canouts and Goodyear 1985:185).

Although the vast majority of these sites are located in eroded areas and exhibit little to no subsurface integrity, Canouts and Goodyear (1985) argue that they have analytical value. This value lies in their horizontal rather than vertical dimensions. They argue that

future investigators of upland sites must effect broad-scale spatial analyses comparable to the temporal analyses effected through excavation of deeply stratified sites. Both endeavors are necessary, and neither is sufficient for the total understanding of Piedmont prehistory (Canouts and Goodyear 1985:193).

One observation that Canouts and Goodyear (1985) made is that lithic raw material ratios change through time. For instance, at the Gregg Shoals site in Elbert County, Georgia, the Early Archaic assemblage reflects greater use of non-local cryptocrystalline materials and the Late Archaic, greater use of non-quartz local material (see Tippitt and Marquardt 1982).

For historic information on Catawba County see works by Fulbright (1986) and Preslar (1954) and for specific history on the town of Hickory, Mohny and Phillips (1988) gives a good source of background.

Paleoindian Period

The Paleoindian Period, most commonly dated from about 12,000 to 10,000 B.P., is

| Regional Phases | | | | | | |
|-----------------|--------------|------------|---|--|------------------|-----------|
| Dates | Period | Sub-Period | NORTH COASTAL | SOUTH COASTAL | CENTRAL PIEDMONT | MOUNTAIN |
| 1715 - | HIST | EARLY | Tide Water Carolina Algonkians | Waccamaw ? | Caraway | Qualla |
| 1650 | | | Inner Coastal Plain Meherrin Tuscarora | Oak Island | Dan River | Pee Dee |
| 800 | WOODLAND | LATE | Collington | Cashie | Uwharrie | Pisgah |
| A.D. | | MIDDLE | Mount Pleasant | Cape Fear Hanover | Yadkin | Conestee |
| B.C. | | EARLY | Deep Creek | New River | Badin | Pigeon |
| 300 | ARCHAIC | LATE | | Thom's Creek Stallings Savannah River Halifax | | Swannanoa |
| 1000 | | MIDDLE | | Gulford Morrow Mountain Stanly | | |
| 2000 | | EARLY | | Kirk Palmer | | |
| 3000 | PALEO INDIAN | | | Hardaway - Dalton Clovis | | |
| 5000 | | | | | | |
| 8000 | | | | | | |
| 10,000 | | | | | | |
| 12,000 | | | | | | |

Figure 7. A generalized cultural sequence for North Carolina.

evidenced by basally thinned, side-notch projectile points; fluted, lanceolate projectile points; side scrapers; end scrapers; and drills (Coe 1964; Michie 1977; Williams 1965). Oliver (1981, 1985) has proposed to extend the Paleoindian dating in the North Carolina Piedmont to perhaps as early as 14,000 B.P., incorporating the Hardaway Side-Notched and Palmer Corner-Notched types, usually accepted as Early Archaic, as representatives of the terminal phase. This view, verbally suggested by Coe for a number of years, has considerable technological appeal.¹ Oliver suggests a continuity from the Hardaway Blade through the Hardaway-Dalton to the Hardaway Side-Notched, eventually to the Palmer Side-Notched (Oliver 1985:199-200). While convincingly argued, this approach is not universally accepted.

The Paleoindian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along major river drainages, which Michie interprets to support the concept of an economy "oriented toward the exploitation of now extinct mega-fauna" (Michie 1977:124). Survey data for Paleoindian tools, most notably fluted points, is somewhat dated, but has been summarized by Charles and Michie (1992). They reveal a widespread distribution across the state (see also Anderson 1992b:Figure 5.1) with at least several concentrations relating to intensity of collector activity. What is clear is that points are found fairly far removed from the origin of the raw material. Charles and Michie suggest that this may "imply a geographically extensive settlement system" (Charles and Michie 1992:247).

Although data are sparse, one of the more attractive theories that explains the widespread

distribution of Paleoindian sites is the model tracking the replacement of a high technology forager (or HTF) adaptation by a "progressively more generalized band/microband foraging adaption" accompanied by increasingly distinct regional traditions (perhaps reflecting movement either along or perhaps even between river drainages) (Anderson 1992b:46).

Distinctive projectile points include lanceolates such as Clovis, Dalton, perhaps the Hardaway, and Big Sandy (Coe 1964; Phelps 1983; Oliver 1985). A temporal sequence of Paleoindian projectile points was proposed by Williams (1965:24-51), but according to Phelps (1983:18) there is little stratigraphic or chronometric evidence for it. While this is certainly true, a number of authors, such as Anderson (1992a) and Oliver (1985) have assembled impressive data sets. We are inclined to believe that while often not conclusively proven by stratigraphic excavations (and such proof may be an unreasonable expectation), there is a large body of circumstantial evidence. The weight of this evidence tends to provide considerable support.

Unfortunately, relatively little is known about Paleoindian subsistence strategies, settlement systems, or social organization (see, however, Anderson 1992b for an excellent overview and synthesis of what is known). Generally, archaeologists agree that the Paleoindian groups were at a band level of society, were nomadic, and were both hunters and foragers. While population density, based on isolated finds, is thought to have been low, Walthall suggests that toward the end of the period, "there was an increase in population density and in territoriality and that a number of new resource areas were beginning to be exploited" (Walthall 1980:30).

Archaic Period

The Archaic Period, which dates from 10,000 to 3,000 B.P.², does not form a sharp

¹ While never discussed by Coe at length, he did observe that many of the Hardaway points, especially from the lowest contexts, had facial fluting or thinning which, "in cases where the side-notches or basal portions were missing, . . . could be mistaken for fluted points of the Paleo-Indian period" (Coe 1964:64). While not an especially strong statement, it does reveal the formation of the concept. Further insight is offered by Ward's (1983:63) all too brief comments on the more recent investigations at the Hardaway site (see also Daniel 1992).

² The terminal point for the Archaic is no clearer than that for the Paleoindian and many researchers suggest a terminal date of 4,000 B.P. rather than 3,000 B.P. There is also the question of whether

break with the Paleoindian Period, but is a slow transition characterized by a modern climate and an increase in the diversity of material culture. Associated with this is a reliance on a broad spectrum of small mammals, although the white tailed deer was likely the most commonly exploited animal. Archaic period assemblages, exemplified by corner-notched and broad-stemmed projectile points, are fairly common, perhaps because the swamps and drainages offered especially attractive ecotones.

Many researchers have reported data suggestive of a noticeable population increase from the Paleoindian into the Early Archaic. This has tentatively been associated with a greater emphasis on foraging. Diagnostic Early Archaic artifacts include the Kirk Corner Notched point. As previously discussed, Palmer points may be included with either the Paleoindian or Archaic period, depending on theoretical perspective. As the climate became hotter and drier than the previous Paleoindian period, resulting in vegetational changes, it also affected settlement patterning as evidenced by a long-term Kirk phase midden deposit at the Hardaway site (Coe 1964:60). This is believed to have been the result of a change in subsistence strategies.

Settlements during the Early Archaic suggest the presence of a few very large, and

be included as Archaic, or will be included with the Woodland. Oliver, for example, argues that the inclusion of ceramics with Late Archaic attributes "complicates and confuses classification and interpretation needlessly" (Oliver 1981:20). He comments that according to the original definition of the Archaic, it "represents a preceramic horizon" and that "the presence of ceramics provides a convenient marker for separation of the Archaic and Woodland periods (Oliver 1981:21). Others would counter that such an approach ignores cultural continuity and forces an artificial, and perhaps unrealistic, separation. Sassaman and Anderson (1994:38-44), for example, include Stallings and Thom's Creek wares in their discussion of "Late Archaic Pottery." While this issue has been of considerable importance along the Carolina and Georgia coasts, it has never affected the Piedmont, which seems to have embraced pottery far later, well into the conventional Woodland period. The importance of the issue in the Sandhills, unfortunately, is not well known.

apparently intensively occupied, sites which can best be considered base camps. Hardaway might be one such site. In addition, there were numerous small sites which produce only a few artifacts — these are the "network of tracks" mentioned by Ward (1983:65). The base camps produce a wide range of artifact types and raw materials which has suggested to many researchers long-term, perhaps seasonal or multi-seasonal, occupation. In contrast, the smaller sites are thought of as special purpose or foraging sites (see Ward 1983:67).

Middle Archaic (8,000 to 6,000 B.P.) diagnostic artifacts include Morrow Mountain, Guilford, Stanly and Halifax projectile points. Much of our best information on the Middle Archaic comes from sites investigated west of the Appalachian Mountains, such as the work by Jeff Chapman and his students in the Little Tennessee River Valley (for a general overview see Chapman 1977, 1985a, 1985b). There is good evidence that Middle Archaic lithic technologies changed dramatically. End scrapers, at times associated with Paleoindian traditions, are discontinued, raw materials tend to reflect the greater use of locally available materials, and mortars are initially introduced. Associated with these technological changes there seem to also be some significant cultural modifications. Prepared burials begin to more commonly occur and storage pits are identified. The work at Middle Archaic river valley sites, with their evidence of a diverse floral and faunal subsistence base, seems to stand in stark contrast to Caldwell's Middle Archaic "Old Quartz Industry" of Georgia and the Carolinas, where axes, choppers, and ground and polished stone tools are very rare.

Among the most common of all Middle Woodland artifacts is the Morrow Mountain Stemmed projectile point. Originally divided into two varieties by Coe (1964:37,43) based primarily on the size of the blade and the stem, Morrow Mountain I points had relatively small triangular blades with short, pointed stems. Morrow Mountain II points had longer, narrower blades with long, tapered stems. Coe suggested a temporal sequence from Morrow Mountain I to Morrow Mountain II. While this has been rejected by some archaeologists, who suggest that the differences are entirely related to the life-stage of

the point, the debate is far from settled and Coe has considerable support for his scenario.

The Morrow Mountain point is also important in our discussions since it represents a departure from the Carolina Stemmed Tradition. Coe has suggested that the groups responsible for the Middle Archaic Morrow Mountain (and the later Guilford points) were intrusive ("without any background" in Coe's words) into the North Carolina Piedmont, from the west, and were contemporaneous with the groups producing Stanly points (Coe 1964:122-123; see also Phelps 1983:23). Phelps, building on Coe, refers to the Morrow Mountain and Guilford as the "Western Intrusive horizon." Sassaman (1995) has recently proposed a scenario for the Morrow Mountain groups which would support this west-to-east time-transgressive process. Abbott and his colleagues, perhaps unaware of Sassaman's data, dismiss the concept, commenting that the sheer distribution and number of these points "makes this position wholly untenable" (Abbott et al. 1995:9).

The controversy surrounding Morrow Mountain also includes its posited date range. Coe (1964:123) did not expect the Morrow Mountain to predate 6500 B.P., yet more recent research in Tennessee reveals a date range of about 7500 to 6500 B.P. Sassaman and Anderson (1994:24) observe that the South Carolina dates have never matched the antiquity of their more western counterparts and suggest continuation to perhaps as late as 5500 B.P. In fact they suggest that even later dates are possible since it can often be difficult to separate Morrow Mountain and Guilford points.

A recently defined point is the MALA. The term is an acronym standing for Middle Archaic and Late Archaic, the strata in which these points were first encountered at the Pen Point site (38BR383) in Barnwell County, South Carolina (Sassaman 1985). These stemmed and notched lanceolate points were originally found in a context suggesting a single-episode event with variation not based on temporal variation. The original discussion was explicitly worded to avoid application of a typology, although as Sassaman and Anderson (1994:27) note, the "type" has spread into more common usage. There are

possible connections with both the Halifax points of North Carolina and the Benton points of the middle Tennessee River valley, while the "heartland" for the MALA appears confined to the lower middle Coastal Plain of South Carolina.

The available information has resulted in a variety of competing settlement models. Some argue for increased sedentism and a reduction of mobility (see Goodyear et al. 1979:111). Ward argues that the most appropriate model is one which includes relatively stable and sedentary hunters and gatherers "primarily adapted to the varied and rich resource base offered by the major alluvial valleys" (Ward 1983:69). While he recognizes the presence of "inter-riverine" sites, he discounts explanations which focus on seasonal rounds, suggesting "alternative explanations . . . [including] a wide range of adaptive responses." Most importantly, he notes that:

the seasonal transhumance model and the sedentary model are opposite ends of a continuum, and in all likelihood variations on these two themes probably existed in different regions at different times throughout the Archaic period (Ward 1983:69).

Others suggest increased mobility during the Archaic (see Cable 1982). Sassaman (1983) has suggested that the Morrow Mountain phase people had a great deal of residential mobility, based on the variety of environmental zones they are found in and the lack of site diversity. The high level of mobility, coupled with the rapid replacement of these points, may help explain the seemingly large numbers of sites with Middle Archaic assemblages. Curiously, the later Guilford phase sites are not as widely distributed, perhaps suggesting that only certain micro-environments were used (cf. Ward [1983:68-69] who would likely reject the notion that substantially different environmental zones are, in fact, represented).

Recently Abbott et al. argue for a combination of these models, noting that the almost certain increase in population levels

probably resulted in a contraction of local territories. With small territories there would have been significantly greater pressure to successfully exploit the limited resources by more frequent movement of camps. They discount the idea that these territories could have been exploited from a single base camp without horticultural technology. Abbott and his colleagues conclude, "increased residential mobility under such conditions may in fact represent a common stage in the development of sedentism" (Abbott et al. 1995:9).

From excavations at a Sandhills site in Chesterfield County, South Carolina, Gunn and his colleague (Gunn and Wilson 1993) offer an alternative model for Middle Archaic settlement. He accepts that the uplands were desiccated from global warming, but rather than limiting occupation, this environmental change made the area more attractive for residential base camps. Gunn and Wilson suggest that the open, or fringe, habitat of the upland margins would have been attractive to a wide variety of plant and animal species.

The Late Archaic, usually dated from 6,000 to 3,000 or 4,000 B.P., is characterized by the appearance of large, square stemmed Savannah River projectile points (Coe 1964). These people continued to intensively exploit the uplands much like earlier Archaic groups with the bulk of our data for this period coming from the Uwharrie region in North Carolina.

One of the more debated issues of the Late Archaic is the typology of the Savannah River Stemmed and its various diminutive forms. Oliver, refining Coe's (1964) original Savannah River Stemmed type and a small variant from Gaston (South 1959:153-157), developed a complete sequence of stemmed points that decrease uniformly in size through time (Oliver 1981, 1985). Specifically, he sees the progression from Savannah River Stemmed to Small Savannah River Stemmed to Gypsy Stemmed to Swannanoa from about 5000 B.P. to about 1,500 B.P. He also notes that the latter two forms are associated with Woodland pottery.

This reconstruction is still debated with a number of archaeologists expressing concern with what they see as typological overlap and

ambiguity. They point to a dearth of radiocarbon dates and good excavation contexts at the same time they express concern with the application of this typology outside the North Carolina Piedmont (see, for a synopsis, Sassaman and Anderson 1990:158-162, 1994:35).

In addition to the presence of Savannah River points, the Late Archaic also witnessed the introduction of steatite vessels (see Coe 1964:112-113; Sassaman 1993), polished and pecked stone artifacts, and grinding stones. Some also include the introduction of fiber-tempered pottery about 4000 B.P. in the Late Archaic (for a discussion see Sassaman and Anderson 1994:38-44). This innovation is of special importance along the Georgia and South Carolina coasts, but seems to have had only minimal impact in the uplands of South or North Carolina.

There is evidence that during the Late Archaic the climate began to approximate modern climatic conditions. Rainfall increased resulting in a more lush vegetation pattern. The pollen record indicates an increase in pine which reduced the oak-hickory nut masts which previously were so widespread. This change probably affected settlement patterning since nut masts were now more isolated and concentrated. From research in the Savannah River valley near Aiken, South Carolina, Sassaman has found considerable diversity in Late Archaic site types with sites occurring in virtually every upland environmental zone. He suggests that this more complex settlement pattern evolved from an increasingly complex socio-economic system. While it is unlikely that this model can be simply transferred to the Sandhills of South Carolina without an extensive review of site data and micro-environmental data, it does demonstrate one approach to understanding the transition from Archaic to Woodland.

Woodland Period

As previously discussed, there are those who see the Woodland beginning with the introduction of pottery. Under this scenario the Early Woodland may begin as early as 4,500 B.P. and continued to about 2,300 B.P. Diagnostics would include the small variety of the Late Archaic Savannah River Stemmed point (Oliver

1985) and pottery of the Stallings and Thoms Creek series. These sand tempered Thoms Creek wares are decorated using punctations, jab-and-drag, and incised designs (Trinkley 1976). Also potentially included are Refuge wares, also characterized by sandy paste, but often having only a plain or dentate-stamped surface (Waring 1968). Others would have the Woodland beginning about 3,000 B.P. and perhaps as late as 2,500 B.P. with the introduction of pottery which is cord-marked or fabric-impressed and suggestive of influences from northern cultures.

There remains, in South Carolina, considerable ambiguity regarding the pottery series found in the Sandhills and their association with coastal plain and piedmont types. The earliest pottery found at many sites may be called either Deptford or Yadkin, depending on the research or their inclination at any given moment.

The Deptford phase, which dates from 3050 to 1350 B.P., is best characterized by fine to coarse sandy paste pottery with a check stamped surface treatment. The Deptford settlement pattern involves both coastal and inland sites.

Inland sites such as 38AK228-W, 38LX5, 38RD60, and 38BM40 indicate the presence of an extensive Deptford occupation on the Fall Line and the Inner Coastal Plain/Sand Hills, although sandy, acidic soils preclude statements on the subsistence base (Anderson 1979; Ryan 1972; Trinkley 1980). These interior or upland Deptford sites, however, are strongly associated with the swamp terrace edge, and this environment is productive not only in nut masts, but also in large mammals such as deer. Perhaps the best data concerning Deptford "base camps" comes from the Lewis-West site (38AK228-W), where evidence of abundant food remains, storage pit features, elaborate material culture, mortuary behavior, and craft specialization has been reported (Sassaman et al. 1990:96-98; see also Sassaman 1993 for similar data recovered from 38AK157).

Further to the north and west, in the Piedmont, the Early Woodland is marked by a pottery type defined by Coe (1964:27-29) as

Badin.³ This pottery is identified as having very fine sand in the paste with an occasional pebble. Coe identified cord-marked, fabric-marked, net-impressed, and plain surface finishes. Beyond this pottery little is known about the makers of the Badin wares and relatively few of these sherds are reported from South Carolina sites.

Somewhat more information is available for the Middle Woodland, typically given the range of about 2,300 B.P. to 1,200 B.P. In the Piedmont and even into the Sand Hills, the dominant Middle Woodland ceramic type is typically identified as the Yadkin series. Characterized by a crushed quartz temper the pottery includes surface treatments of cord-marked, fabric-marked, and a very few linear check-stamped sherds (Coe 1964:30-32). It is regrettable that several of the seemingly "best" Yadkin sites, such as the Trestle site (31An19) explored by Peter Cooper (Ward 1983:72-73), have never been published.

Yadkin ceramics are associated with medium-sized triangular points, although Oliver (1981) suggests that a continuation of the Piedmont Stemmed Tradition to at least 1650 B.P. coexisted with this Triangular Tradition. The Yadkin in South Carolina has been best explored by research at 38SU83 in Sumter County (Blanton et al. 1986) and at 38FL249 in Florence County (Trinkley et al. 1993)

In some respects the Late Woodland (1,200 B.P. to 400 B.P.) may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas there were major cultural changes, such as the continued development and elaboration of agriculture, the Carolina groups settled into a lifeway not appreciably different from that observed for the previous 500-700 years. From the vantage point of the Middle Savannah Valley Sassaman and his colleagues note that, "the Late Woodland is difficult to delineate typologically from

³ The ceramics suggest clear regional differences during the Woodland which seem to only be magnified during the later phases. Ward (1983:71), for example, notes that there are "marked distinctions" between the pottery from the Buggs Island and Gaston Reservoirs and that from the south-central Piedmont.

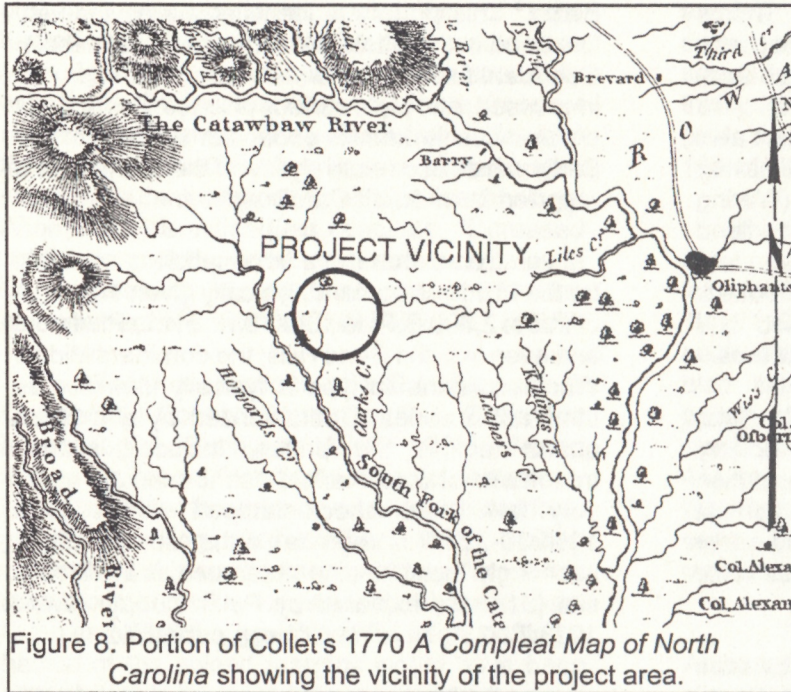


Figure 8. Portion of Collet's 1770 A Compleat Map of North Carolina showing the vicinity of the project area.

its antecedent or from the subsequent Mississippian period" (Sassaman et al. 1990:14). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971).

Historic Overview

The mid 1700s saw the earliest settlers in the Hickory area, which at that time was located in Bladen County. These immigrants, probably of Scotch-Irish and German descent, came from Pennsylvania where an increase of immigration had decreased the amount of farm land in the area (Preslar 1954). It was around this time that a series of smallpox epidemics came about which greatly reduced the number of Native Americans in the area.

In 1750, Anson County was created and in 1762, the Hickory area split off to become Mecklenburg County. Tryon County was formed from Mecklenburg County in 1768 and by 1779, following the Revolution,

Tryon County was broken up into Lincoln County (containing Hickory) and Rutherford County (Corbitt 1975).

Around 1782, William McMullin received a 640 acre tract of land which would be included in the downtown section of Hickory when it became incorporated in 1889. On this tract of land, near the intersection of three roads connecting the Bandys, Jacobs Fork, and Newton townships with Maiden and Sherrils Ford, McMullin established an inn, known as Hickory Tavern, which served travelers (Mohny and Phillips 1988; Preslar 1954).

In 1842, Catawba County was created from a part of Lincoln County, with the town of Newton designated as the county seat (Corbitt 1975). When the first railroad



Figure 9. Portion of the 1865 U.S. Coast Survey map of North Carolina showing the project area.

lines reached the Hickory area in 1860, suddenly Hickory Tavern became a local commercial center until the outbreak of the Civil War (Mohney and Phillips 1988). Hickory Tavern and the surrounding area served as a local supply station during the War (Mohney and Phillips 1988; Corbitt 1975).

After the war, Catawba County experienced an increase of industrialization with the manufacture of tobacco, shingle making, whiskey making, leather goods, and many grist, corn, flour, and sawmills were in operation (Preslar 1954). By 1889, Hickory was incorporated as a city and into the 1890s, became the largest manufacturing and commercial community in Catawba County, even surpassing the county seat of Newton in population (Mohney and Phillips 1988).

Catawba County continued to be a big provider of wheat, cotton, tobacco, and dairy products and into the twentieth century furniture and hosiery mills were established in Hickory (Sharpe 1961). By 1961, Hickory had 46 furniture plants and 89 hosiery mills (Mohney and Phillips 1988). Today, Hickory, even with many rural areas still in existence, continues to be the most populated city in Catawba County.



Figure 10. Portion of Kerr's and Cain's 1882 Map of North Carolina showing the project area.

RESEARCH METHODS AND FINDINGS

Introduction

As previously indicated, the primary goals of this survey are to identify, record, and assess the significance of archaeological sites within the proposed corridor. No major analytical hypotheses were created prior to the field work and data analysis. This research design proposed for this study is fundamentally explorative and explicative.

Archaeological Field Methods and Findings

The initially proposed field techniques involved the placement of shovel tests at 100-foot intervals along the center of the corridor. All soil would be screened through ¼-inch mesh, and each test numbered sequentially. Each test would measure about 1.0 foot square and would normally be taken to a depth of at least 1.0 foot or until subsoil was encountered. In the areas following roadsides, no tests would be excavated, but would be examined for any surface artifacts. Notes would be maintained for profiles at any sites encountered.

Should sites (defined by the presence of two or more artifacts from either surface survey or shovel tests within a 25 foot area) be identified, further tests would be used to obtain data on site boundaries, artifact

quantity and diversity, site integrity, and temporal affiliation. These tests would be placed at 25 foot intervals in a simple cruciform pattern until two consecutive negative shovel tests were encountered. The information required for completion of North Carolina archaeological site forms would be collected and photographs would be taken, if warranted in the opinion of the field investigators. Sites which appeared to be eligible or potentially eligible for inclusion on the National Register of Historic Places would be recorded using a Garmin with WAAS enabled. We have found that this combination is capable of providing potential horizontal errors of 6 m or less.

Shovel tests were placed along the center of the 50-foot wide corridor, but due to the low, poorly drained soils, shovel tests were placed at



Figure 11. River Road looking north.



Figure 12. Fairgrove Road and cul-de-sac looking northwest.

200-foot intervals instead of the originally proposed 100-foot intervals. A total of 259 shovel tests were excavated with the majority of shovel tests encountering Chewacla loams and Congaree soils, both which are located along river and creek edges. The Chewacla soils consist of a dark brown (10YR4/3) loam to a depth of 0.8 foot over a brown (10YR5/3) which occurs to a depth of over 2.3 feet. The Congaree soils consist of a dark brown (10YR4/3) silt loam to a depth of 0.8 foot over a brown (7.5YR4/3) silt loam which occurs to a depth of 1.8 feet.

Also found along the corridors, but in less abundance are Hiwassee soils which have an Ap horizon of dusky red (2.5YR3/2) sandy loam to a depth of 0.3 foot over a dark red (10YR3/6) clay loam to a depth of 0.6 foot, Pacolet soils which consist of a reddish brown (5YR4/4) sandy loam to a depth of 0.3 foot over a red (2.5YR4/6) clay loam which occurs to a depth of 1.2 feet, and Cecil soils which have a yellowish red (5YR4/6) fine sandy loam to a depth of 0.5 foot over a red (2.5YR4/8) clay to a depth of 2.5 feet.

Sites would be evaluated for further work based on the eligibility criteria for the National Register of Historic Places. Chicora Foundation only provides an opinion of National Register

eligibility and the final determination is made by the lead agency in consultation with the North Carolina State Historic Preservation Office.

Analysis of collections would follow professionally accepted standards with a level of intensity suitable to the quantity and quality of the remains.

Nevertheless, the archaeological survey of the 10.97 miles of corridor failed to identify any archaeological remains. This is most

likely the result of the lack of any significant ridge tops and the low, poorly drained areas.

Architectural Survey and Findings

As previously discussed, we only looked for architectural sites which could be immediately viewed from the survey tract. The survey would record buildings, sites, structures, and objects which appeared to have been constructed before 1950 and which retained their integrity. Those which have undergone such extensive modifications to preclude their eligibility were not recorded.

For each identified resource an architectural survey form would be completed and one or two representative photographs would be taken. Permanent control numbers would be assigned by the North Carolina Department of Archives and History at the conclusion of the study.

Several historic structures were located in the project vicinity, but these structures have already been recorded by the North Carolina division of Archives and History and none are eligible for inclusion on the National Register of Historic Places.

CONCLUSIONS

This study involved the examination of approximately 10.97 miles of corridor situated in Catawba County, North Carolina. The tract is proposed for the construction of the Henry Fork River Basin Sewers to be used by the City of Hickory. This report, conducted for Hayes, Seay, Mattern & Mattern, Inc., provides the results of that investigation and is intended to assist that organization comply with their historic preservation responsibilities.

The survey area consists of areas of mostly road and river edges, but also traversed residential yards. The archaeological survey, which included shovel testing conducted at 200-foot intervals, revealed soils typical of low, poorly drained areas. No archaeological sites were uncovered as a result of this investigation. The fact that previously identified sites in the area had been found along ridge tops and the current survey area contained no distinct ridge tops, but instead, stayed along the low, bottomland areas, may account for the lack of sites.

The surrounding areas off the main roads are still fairly rural. The survey corridor encountered both farmland areas and residential neighborhoods, which were still being developed in several areas. Nevertheless the structures adjacent to the corridor were examined, but no additional historic structures were identified, besides the structures identified at the North Carolina Architectural Branch, which are intact and which appear to be potentially eligible for inclusion on the National Register of Historic Places.

No assessment of the project's potential impact to the Yoder Mill Historic District was undertaken during this study. It is our understanding that this concern is being addressed directly by HSMM with the North Carolina State Historic Preservation Office.

It is possible that archaeological remains

may be encountered in the area during construction. As always, the utility's contractors should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who should in turn report the material to the State Historic Preservation Office, or Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No further land altering activities should take place in the vicinity of these discoveries until they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

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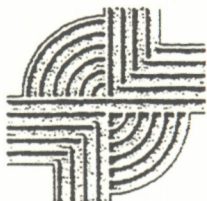
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